

# NetFlow Generation with nGenius Packet Flow eXtender

## Introduction

NetFlow is a protocol that collects IP traffic details such as the source and destination of traffic, type of traffic, and class of service, among several other parameters for use by the network performance, security, and analytics tools. NetFlow is a simple yet effective protocol and over time gained popularity for IETF to adopt and created RFC 3954 and RFC 5101 standards. The NetFlow data is used by the network performance, security and analytics tools for processing flow information as represented by the following functions:

- Security monitoring and malware detection
- Network visibility into traffic flows
- Application monitoring
- Bandwidth monitoring & traffic analysis
- Network awareness and planning
- Determining where to deploy Service quality (QoS) improvements

## Performance Challenges

- NetFlow generation can cause performance degradation in the networking equipment such as the routers and switches, due to an increase in CPU and memory utilization. Due to the overhead processing required, it may affect the device's ability to process production traffic without introducing latency and packet drops.
- With the potential risk of dropping packets as a result of NetFlow generation, some NetFlow generating network equipment will sample packets. This is a sampling of 1 in every "N" packets to generate the metadata and can severely limit the NetFlow analytics and gaps in security visibility.
- In addition, the built-in NetFlow generators are typically able to forward flow records to a limited number of destinations.
- To combat the drawbacks of having NetFlow generated by the networking equipment itself, enterprises and service providers are turning to third-party solutions to generate NetFlow data.

## NETSCOUT NetFlow Solution

Typically, NetFlow solutions consist of three major components: NetFlow generation, collection and analytics. NETSCOUT® is the only vendor in the market to offer an end-to-end NetFlow solution – from tap to tool. NETSCOUT nGenius® Packet Flow eXtender (or PFX) is the NetFlow generator, while nGenius Collector captures NetFlow. The NETSCOUT nGeniusOne® service assurance platform analyzes NetFlow and produces related reports.

- nGenius Packet Flow eXtender is a highly scalable NetFlow generator, in addition to supporting line rate deduplication, header stripping and packet slicing and masking to enhance your visibility network capabilities.

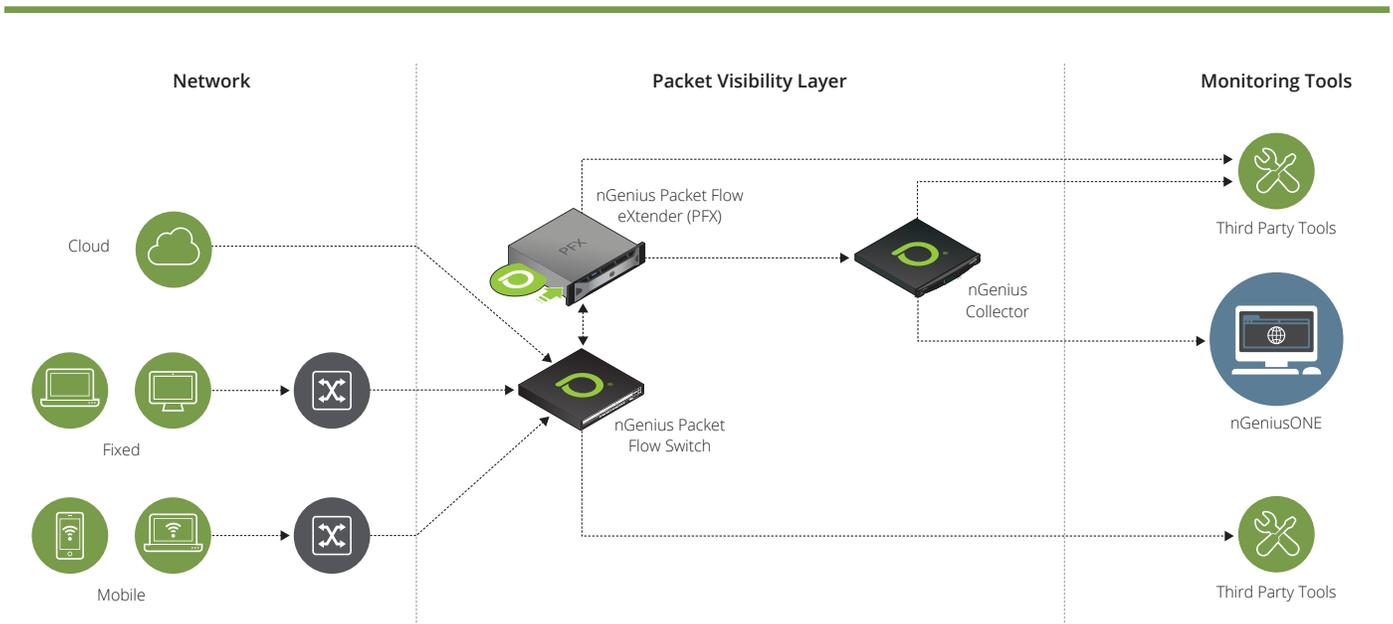


Figure 1: The NETSCOUT end-to-end NetFlow solution, from TAP to tool.



- nGenius Collector is a high-capacity appliance for NetFlow collection and storage that provides cost-effective NetFlow capture for distributed IT environments.
- nGeniusOne is a full-featured service assurance platform that provides insight into interrelated nature of the entire IT environment to effectively triage service issues.

### Convenience and Flexibility with PFX

PFX enables expert packet conditioning when and where you need it. Because PFX is software-based, it can run on multiple x86 server models, providing scale in a cost-effective manner. As part of the nGenius Packet Flow System portfolio, PFX works with any of the NETSCOUT packet brokers or third-party packet brokers. In combination, they enable expert-level capabilities across any number of networks and segments, whether they are cloud, mobile or fixed. For example, you can use the nGenius Packet Flow Switch for aggregation, filtering, load balancing, rate conversion, and packet manipulation, and generate NetFlow with PFX.

### Highlights and Features

- Generates NetFlow versions v5, v9 and IPFIX.
- Unsampling 1:1 NetFlow record generation
- High performance traffic handling with up to 200 Gbps of traffic and 120 million flows per minute.
- Exports to up to four (4) NetFlow destination collectors.
- Flexible filters for selecting NetFlow generation.

### Key Benefits

Optimizing Production Network traffic for best tool performance by:

- Offloading NetFlow generation to the Packet Flow eXtender to minimize risk and avoid additional and unwanted overhead on the production network switches and routers.
- Minimizing risk of losing production traffic as a result of generating NetFlow or having to sample network traffic.
- Providing cost effective, scalable and complete Service Assurance and Security Monitoring with unsampled NetFlow records.



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